

(19)  **Europäisches Patentamt**
European Patent Office
Office européen des brevets



(11) **EP 0 684 313 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
 19.05.1999 Bulletin 1999/20

(51) Int. Cl.⁶: **C12N 15/55, C12N 9/16,**
A23K 1/165

(43) Date of publication A2:
 29.11.1995 Bulletin 1995/48

(21) Application number: **95105693.6**

(22) Date of filing: **15.04.1995**

(84) Designated Contracting States:
AT BE CH DE DK ES FR GB IT LI NL

(30) Priority: **25.04.1994 EP 94810228**

(71) Applicant:
F. Hoffmann-La Roche AG
4002 Basel (CH)

(72) Inventors:
 • **Van Loon, Adolphus**
CH-4310 Rheinfelden (CH)
 • **Mitchell, David**
CH-4147 Aesch (CH)

(74) Representative: **Braun, Axel et al**
F.Hoffmann-La Roche AG
Patent Department (PLP),
124 Grenzacherstrasse
4070 Basel (CH)

(54) **Polypeptides with phytase activity**

(57) The present invention is directed to a DNA sequence coding for a polypeptide having phytase activity which DNA sequence is derived from specific groups of fungi, polypeptides encoded by such DNA sequences, vectors comprising such DNA sequences, bacteria or a fungal or yeast host transformed by such DNA sequences or vectors, a process for the preparation of a polypeptide by culturing such transformed hosts and composite feeds comprising one or more such polypeptides.

EP 0 684 313 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 95 10 5693

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
D,X	YAMADA K ET AL: "PHYTASE FROM ASPERGILLUS TERREUS. PART I. PRODUCTION, PURIFICATION AND SOME GENERAL PROPERTIES OF THE ENZYME" AGRICULTURAL AND BIOLOGICAL CHEMISTRY, vol. 32, no. 10, July 1968, pages 1275-1282, XP002053182 * the whole document *	1-3,16, 22	C12N15/55 C12N9/16 A23K1/165
Y	---	4-15, 17-21, 23-25	
X	PIDDINGTON C S ET AL: "The cloning and sequencing of the genes encoding phytase (phy) and pH 2.5-optimum acid phosphatase (aph) from Aspergillus niger var awamori" GENE, vol. 133, 1993, pages 55-62, XP002089982 * the whole document *	4-8	
Y	MULLANEY EJ ET AL: "POSITIVE IDENTIFICATION OF A LAMBDA GT11 CLONE CONTAINING A REGION OF FUNGAL PHYTASE GENE BY IMMUNOPROBE AND SEQUENCE VERIFICATION" APPL MICROBIOL BIOTECHNOL, vol. 35, no. 5, August 1991, pages 611-614, XP002096740 * the whole document *	4-15, 17-19,21	TECHNICAL FIELDS SEARCHED (Int.Cl.6) C12N A23K
Y	PEN J ET AL: "PHYTASE-CONTAINING TRANSGENIC SEEDS AS A NOVEL FEED ADDITIVE FOR IMPROVED PHOSPHORUS UTILIZATION" BIO/TECHNOLOGY, vol. 11, no. 7, July 1993, pages 811-814, XP002026203 * the whole document *	20,23-25	

	-/--		
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 22 March 1999	Examiner Bilang, J
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 03.82 (P04C01)



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 95 10 5693

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
D,A	<p>SEGUEILHA L ET AL: "PURIFICATION AND PROPERTIES OF THE PHYTASE FROM SCHWANNIOMYCES CASTELLII" JOURNAL OF FERMENTATION AND BIOENGINEERING, vol. 74, no. 1, 1992, pages 7-11, XP002053183 * the whole document *</p> <p>---</p>		
L	<p>MITCHELL DB ET AL: "THE PHYTASE SUBFAMILY OF HISTIDINE ACID PHOSPHATASES: ISOLATION OF GENES FOR TWO NOVEL PHYTASES FROM THE FUNGI ASPERGILLUS TERREUS AND MYCELIOPHTHORA THERMOPHILA" MICROBIOLOGY, vol. 143, 1997, pages 245-252, XP002097277 * the whole document *</p> <p>-----</p>		
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 22 March 1999	Examiner Bilang, J
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document</p>			

EPO FORM 1503 (03.02.92) (P04001)